Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method of parametrically encoding a transient audio signal, the method comprising:

(a) determining a set of frequency values V for N largest frequency components of the transient audio signal, where N is a ~~predetermined~~ selected number;

(b) determining an approximate envelope of the transient audio signal; ~~and~~

(c) determining a ~~predetermined~~ selected number P of amplitude values W of samples of the approximate ~~envelope for use in generating a spline approximation of the approximate~~ envelope;

(d) generating a spline approximation of the approximate envelope using a spline interpolation function and the amplitude values W; and

(e) generating an encoder approximation of the transient audio signal based on the spline approximation, the set of frequency values V, the number N, the number P and the amplitude values W,

whereby a parametric representation of the transient audio signal is given by parameters including V, N, P and W, such that a decoder receiving the parametric representation can reproduce a decoder approximation of the transient audio signal.

2. (Currently Amended) The method of claim 1, further comprising:

~~(a) generating a spline approximation of the approximate envelope using a spline interpolation function and the amplitude values W;~~

~~(b) generating an encoder approximation of the transient audio signal based on the spline approximation, the set of frequency values V, the number N, the number P and the amplitude values W;~~

~~(c)~~ determining energy levels of the encoder approximation and the transient audio signal, respectively; and

~~(d)~~ determining a scaling factor as a function of the energy levels of the encoder approximation and the transient audio signal for scaling the decoder approximation with the energy level of the transient audio signal.

3. (Original) The method of claim 1, further comprising transmitting the parametric representation of the transient audio signal via a communication medium.

4. (Currently Amended) The method of claim ~~2,~~ 1 wherein the spline interpolation function is a cubic spline interpolation function.

5. (Original) The method of claim 1, wherein N is determined according to a bit rate of an audio encoder performing the method.

6. (Original) The method of claim 1, wherein step (a) includes:

determining a set of frequency components of the transient audio signal by performing a fast Fourier transform thereof, and

selecting N largest frequency components of the set of determined frequency components.

7. (Original) The method of claim 1, further comprising determining an interval, I, of the transient audio signal and wherein the parameters of the parametric representation further include the interval I.

8. (Original) The method of claim 7, wherein the samples W are equally spaced in time over the interval I.

9. (Original) The method of claim 1, wherein a received approximation of the transient audio signal x[n] is given by:

$$\hat{x}[n] = \sum_{k \in V} \left(real(X[k])\cos\left(\frac{2\pi nk}{I}\right) - imag(X[k])\sin\left(\frac{2\pi nk}{I}\right) \right)$$

where X[k] are frequency coefficients of x[n] for k=1, 2, ..., N; and

I is the interval of the transient audio signal.

10. (Original) The method of claim 1, wherein step (b) includes:

determining an absolute value version $x_{abs}[n]$ of the transient audio signal x[n]; and

low-pass filtering the absolute value version $x_{abs}[n]$ to generate the approximate envelope $x_{env}[n]$.

11. (Currently Amended) An encoder, the encoder comprising:

means for determining a set of frequency values V for N largest frequency components of a transient audio signal, where N is a ~~predetermined~~ selected number;

means for determining an approximate envelope of the transient audio signal; ~~and~~

means for determining a ~~predetermined~~ selected number P of amplitude values W of samples of the approximate ~~envelope for use in generating a spline approximation of the approximate~~ envelope~~.~~;

means for generating a spline approximation of the approximate envelope using a spline interpolation function and the amplitude values W; and

means for generating an encoder approximation of the transient audio signal based on the spline approximation, the set of frequency values V, the number N, the number P and the amplitude values W.

12.-15. (Canceled)

16. (Currently Amended) A system for parametrically encoding a transient audio signal, the system comprising:

means for determining a set of frequency values V of N largest frequency components of the transient audio signal, where N is a predetermined number;

means for determining an approximate envelope of the transient audio signal;

means for determining a predetermined number P of amplitude values W of samples of the approximate ~~envelope for use in generating a spline approximation of the approximation~~ envelope;

means for generating a spline approximation of the approximate envelope using a spline interpolation function and the amplitude values W;

means for generating an encoder approximation of the transient audio signal based on the spline approximation, the set of frequency values V, the number N, the number P and the amplitude values W;

means for transmitting a parametric representation of the transient audio signal comprising a set of parameters, the parameters including V, N, P and W, such that a decoder receiving the parametric representation can reproduce a decoder approximation of the transient audio signal.

17. (Currently Amended) A signal encoder, the encoder comprising:

a sinusoidal component estimator ~~for estimating~~ configured to estimate a set of values V for a number N of sinusoidal components of a signal;

a sinusoidal component quantifier coupled to the sinusoidal component estimator;

a signal envelope estimator ~~for generating~~ configured to generate an estimated signal envelope of the signal and a set of values W for a number P of samples of the estimated signal envelope;

a signal envelope quantifier coupled to the signal envelope parameter~~-estimator;~~ estimator and configured to generate an encoder approximation of the signal based on a spline approximation of the estimated signal envelope; and

a multiplexer coupled to the sinusoidal component quantifier and the signal envelope quantifier ~~for generating~~ and configured to generate an encoded data stream, the encoded data stream including the values V and W.

18. (Original) The encoder of claim 17 wherein the signal envelope estimator determines an energy scaling factor.

19. (Canceled)

20. (Currently Amended) A method of encoding a signal, the method comprising:

(a) determining a set of frequency values V for N frequency components of the signal, where N is a ~~predetermined~~ selected number;

(b) determining an approximate envelope of the signal; ~~and~~

(c) determining a ~~predetermined~~ selected number P of amplitude values W of samples of the approximate envelope;~~.~~

(d) generating a spline approximation of the approximate envelope using a spline interpolation function and the amplitude values W; and

(e) generating an encoder approximation of the signal based on the spline approximation, the set of frequency values V, the number N, the number P and the amplitude values W.

21. (Currently Amended) The method of claim 20, further comprising:

~~(a) generating a spline approximation of the approximate envelope using a spline interpolation function and the amplitude values W;~~

~~(b) generating an encoder approximation of the signal based on the spline approximation, the set of frequency values V, the number N, the number P and the amplitude values W;~~

~~(c)~~ determining energy levels of the encoder approximation and the signal, respectively; and

~~(d)~~ determining a scaling factor as a function of the energy levels of the encoder approximation and the signal.

22. (Original) The method of claim 21, wherein the spline interpolation function is a cubic spline interpolation function.

23. (Original) The method of claim 20, wherein step (a) includes:

determining a set of frequency components of the signal by performing a fast Fourier transform thereof, and

selecting N largest frequency components of the set of determined frequency components.

24. (Original) The method of claim 20, further comprising determining an interval, I, of the signal.

25. (Original) The method of claim 24, wherein the samples W are equally spaced in time over the interval I.

26. (Original) The method of claim 20, wherein an approximation of the signal x[n] is given by:

$$\hat{x}[n] = \sum_{k \in V} \left(real(X[k]) \cos\left(\frac{2\pi nk}{I}\right) - imag(X[k]) \sin\left(\frac{2\pi nk}{I}\right) \right)$$

where X[k] are frequency coefficients of x[n] for k=1, 2, ..., N; and

I is the interval of the transient audio signal.

27. (Original) The method of claim 20, wherein step (b) includes:

determining an absolute value version $x_{abs}[n]$ of the signal $x[n]$; and

low-pass filtering the absolute value version $x_{abs}[n]$ to generate the approximate envelope $x_{env}[n]$.

28. (New) The method of claim 20 wherein N and P are predetermined numbers.

29. (New) The method of claim 1 wherein N and P are predetermined numbers.

30. (New) The encoder of claim 11 wherein N and P are predetermined numbers.